

## PATENT CLAIMS

- 1) A method to hinder the progress of avalanches that fall with high velocity and contain an enormous amount of energy, *characterized by* catching the avalanche in a special protection system (1), which mainly consists of a net sack (9) fastened by main strings (3, 11) to the ground, and an oblong storage box (16) consisting of a storage platform (5), that stands on poles (4) equipped with hinges (6), and a protection helmet (17), where the net sack (9) is ready and waiting inside the storage box (16), whereas the protection system (1) is planted on a mountain slope, in a canyon, at the foot of a mountain or at other places where the risk of falling avalanches exists, in such a way that one of the long side of the storage box (16) faces the direction from which the avalanche falls and the air mass, that the avalanche thrusts ahead of itself as it falls, flings the protection helmet (17) backwards away from the platform (5), and whereby the net sack (9) opens because of the wing units (7) and the net sack then flings out of the storage box, where the platform (5) and flat plates (8) helps to keep the net sack open because of the effect from the air stream, the form of the wings and the other components and their placement above, below and sideways of the opening of the net sack.
- 2) A method according to claim 1, *characterized by* that the storage platform (5), being oblong and having a flat top side and an aerodynamically curved bottom side and to which the poles (4) are fastened, falls down on to the main strings (11) because of the hinges (6) of the poles (4), when the avalanche smashes on to the protection system (1), where the main strings (11) are fastened to the footrope (10), which is the lower border of the opening of the net sack (9), and thereby the platform (5) holds the net sack down and directs the avalanche into the sack, where, at the same time, the wing units (7), which are fastened to the top rope (13) of the upper border of the opening of the net sack, pulls up the sack's opening because of the air stream, whilst the units (8), which are flat plates fastened, with their thin side up, on to the main strings (3), which are fastened at the one end to each of the lateral sides of the net sack (9) and to the

anchors (2) on the other end, secures the opening of the net sack (9) in the lateral direction.

5 3) A method according to claim 1, *characterized by* that, at each risk zone for avalanches, a multiple protection system units (1) of variable sizes are installed in overlapping rows to form a continuous protective wall against a potential avalanche.

10 4) A protection system to hinder avalanches that fall with high velocity and contain an enormous amount of energy, according to the method disclosed in claims 1 – 3, *characterized by* the protection device (1) consisting mainly of a semi-circular net sack (9) with mesh and an opening; a top rope (13); a foot rope (10); leading strings (12, 14, 15) and wing units (7) attached to the top rope (13) and the net sack (9); main strings (3, 11) which are fastened to ground anchors (2) at one end and at the other end to leading strings (12), foot rope (10) and the top rope (13) of the net sack (9); flat plates (8) that are attached to the main strings (3); storage platform (5) standing on poles (4) which are equipped with locking hinges (6); and a protective helmet (17).

20 5) A protection system according to claim 4, *characterized by* that the net sack (9) is knotted or sawed of plastic straps or woven of plastic material that forms net mesh with 30%-90% density, and the opening of the net sack (9) is quadrilateral and almost box-like in an extended position, with a top rope (13), which forms the upper border of the opening and to which the wing units (7) are fastened; the footrope (10), which forms the lower border of the opening and to which the main strings (11) are fastened; and leading strings (12) that forms the side borders of the opening.

30 6) A protection system according to claim 4 – 5, *characterized by* an oblong storage box (16) consisting of a storage platform (5), which forms the floor of the storage box and stands on at least six poles or feet (4), that have inclined sidebars, whereas the platform (5) is oblong and having a flat top side and an aerodynamically curved bottom side; and further consists of an oblong

and box-shaped protection helmet (17) mounted on top of the platform (5), whereas it closes the box that contains the net sack (9), the wing units (7), flat plates (8), and the main strings (3, 11), which are placed on top of the storage platform (5).

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- 7) A protection system according to claim 4 – 6, *characterized by* that each pole (4) is equipped with at least two hinges (6) which have lock-bolts that snap apart under action of a force from the avalanche hitting the storage box (16), and the length of the poles (4) is variable.

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- 8) A protection system according to claim 4 – 6, *characterized by* the earth fasteners of the protection apparatus (1) are ground anchors (2), which are steel bars that are drilled and fastened by concrete down into the ground forming a semi-circle according to the direction of the force action of the main strings (3, 11), and where each steel bar has an arm that join together to form one fastening point where to the main strings (3, 11) are connected to and there are 1 to 12 steel bars for each fastening point.

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